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NRC-95-0126  
November 17, 1995

U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, D. C. 20555

- References:
- 1) Fermi 2  
NRC Docket No. 50-341  
NRC License No. NPF-43
  - 2) NRC Generic Letter 92-01, Revision 1, "Reactor Vessel Structural Integrity," dated March 6, 1992
  - 3) Detroit Edison Letter to NRC, "Detroit Edison Response to Generic Letter 92-01, Rev. 1," NRC-92-0074, dated June 30, 1992
  - 4) NRC Letter to Detroit Edison, "Response to Generic Letter 92-01, Revision 1, Reactor Vessel Structural Integrity,"  
(TAC No. M83463) dated July 21, 1993
  - 5) Detroit Edison Letter to NRC, "Detroit Edison Response to the NRC RAI on Generic Letter 92-01, Revision 1,"  
NRC-93-0114, dated September 22, 1993
  - 6) General Electric Report NEDO-32205-A Revision 1, dated February 1994
  - 7) NRC Letter to Detroit Edison, "Generic Letter (GL) 92-01, Revision 1, Reactor Vessel Structural Integrity,"  
(TAC No. M83464) dated April 12, 1994

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- 8) Detroit Edison Letter to NRC, "Response to an NRC Item on Generic Letter 92-01, Revision 1, Reactor Vessel Structural Integrity (TAC No. M83463)," NRC-94-0049, dated May 19, 1994
- 9) NRC Generic Letter 92-01, Revision 1, Supplement 1, "Reactor Vessel Structural Integrity," dated May 19, 1995
- 10) Detroit Edison Letter to NRC, "Detroit Edison's Initial Response to NRC Generic Letter 92-01, Revision 1, Supplement 1," NRC-95-0082, dated August 4, 1995
- 11) BWRVIP Letter to NRC "BWRVIP Action Plan for RPV Integrity Data," 95-404, dated August 10, 1995
- 12) BWRVIP Letter 95-0514, addressed to the NRC, dated 11/15/95 transmitting GE Nuclear Energy report titled "Bounding Assessment of BWR/2-6 Reactor Pressure Vessel Integrity Issues"

Subject: Detroit Edison's Final Response to NRC Generic Letter 92-01, Revision 1, Supplement 1

Generic Letter 92-01, Revision 1, Supplement 1 (Reference 9) required responses to 4 items. Response to the first "Required Information" item was provided by Reference 10.

This letter provides Detroit Edison's response to Generic Letter 92-01, Revision 1, Supplement 1 (Reference 9), "Required Information" Items 2, 3, and 4. Detroit Edison's response has been coordinated with the activities of the BWR Vessel & Internals Project (BWRVIP), and references BWRVIP Letter 95-0514, dated 11/15/95 (Reference 12).

• **Detroit Edison Response to "Required Information" Item 2:**

The Generic Letter Supplement requests "an assessment of any change in best-estimate chemistry based on consideration of all relevant data".

The BWRVIP Action Plan (Reference 11) states, "it is the intent of the BWRVIP to assess changes in best-estimate chemistry using a standard industry method in cooperation with the NEI RPV Integrity Data Task Force." This is an ongoing

activity, which is expected to take more than a year. As an interim activity, the BWRVIP has performed a "Bounding Assessment of BWR/2-6 Reactor Pressure Vessel Integrity Issues" (Reference 12). This assessment uses bounding values of best-estimate chemistry which are expected to be conservative.

• **Detroit Edison Response to "Required Information" Item 3:**

The Generic Letter Supplement requests "a determination of the need for use of the ratio procedure in accordance with the established Position 2.1 of Regulatory Guide 1.99, Revision 2, for those licensees who use surveillance data to provide a basis for the RPV integrity evaluation;..."

Position 2.1 of RG 1.99, Rev. 2 provides a method to adjust the Adjusted Reference Temperature (ART) values to reflect the results of two or more credible surveillance data sets.

Detroit Edison has not yet removed any surveillance samples from the Fermi 2 reactor vessel. The first surveillance sample capsule is currently scheduled for removal in 1998, during the seventh refuel outage. This will provide Fermi with its first surveillance data set.

Since Detroit Edison does not yet have surveillance sample data, this is not a near term issue. Prior to using surveillance data to update the Reactor Pressure Vessel integrity evaluation, Detroit Edison will determine the need for the use of the ratio procedure per position 2.1 of RG 1.99 Rev 2. Detroit Edison is participating with the BWRVIP which is working with industry groups on the issue of Position 2.1 of RG 1.99, Rev. 2.

• **Detroit Edison Response to "Required Information" Item 4:**

The Generic Letter Supplement requests "a written report providing any newly acquired data... and (1) the results of any necessary revisions to the evaluation of RPV integrity... or (2) a certification that previously submitted evaluations remain valid."

Detroit Edison agrees with statements in the Generic Letter Supplement that the nature of BWR operating characteristics are such that Pressurized Thermal Shock (PTS) and Low Temperature Over Pressurization (LTOP) events do not apply to BWRs. The RPV integrity issues applicable to BWRs are Upper Shelf Energy (USE) and Pressure-Temperature (P-T) limits.

As stated in response to Item 2 above, Detroit Edison is participating with the BWRVIP in its effort to assess changes in best-estimate chemistry. This is an ongoing effort which is expected to take more than a year to complete. In the interim, the BWRVIP has performed a bounding assessment review, titled "Bounding Assessment of BWR/2-6 Reactor Pressure Vessel Integrity Issues" (Reference 12). Detroit Edison has confirmed the Fermi data used in the BWRVIP report to be accurate.

Using a bounding value of chemistry variability of 0.35% and a bounding fluence value of  $2.4 \times 10^{18}$  n/cm<sup>2</sup>, the BWRVIP report specifically addresses:

- The impact of weld chemistry variability on USE equivalent margin analysis (EMA)
- The impact of weld chemistry variability on Pressure-Temperature limits.

The BWR Owners Group (BWROG) submitted an EMA in 1994 (Reference 5) which demonstrated the adequacy of USE for all domestic BWR's. The BWRVIP reviewed the 1993 BWROG EMA, considering updated fluences and bounding weld chemistries. The BWRVIP report (Reference 12) concludes that the BWROG EMA is still bounding for the Fermi reactor vessel.

The industry through NEI, is working on developing a standard method to determine best-estimate weld chemistry. Weld chemistry variability could impact the degree of conservatism in the P-T curves. The Fermi reactor vessel was fabricated by Combustion Engineering (CE). CE has identified variability in some of their welds.

The BWRVIP report (Reference 12) identifies the Fermi reactor vessel as having potentially significant weld chemistry variability. The BWRVIP report performed a bounding analysis of Adjusted Reference Temperature (ART). The bounding ART was compared with the limiting beltline weld ART. Per this bounding review, it was found the Fermi reactor vessel P-T curves would shift 1° at 32 Effective Full Power Years.

The BWRVIP report (Reference 12) further reviewed the impact of the P-T curves shift on the ASME Code Appendix G safety margins. Appendix G requires a safety margin of 1.5 be applied to the leak rate P-T curves. With the 1° shift, a safety margin of 1.49 results. This is a negligible change, which is based on bounding values, not best-estimate chemistries. Once industry best-estimate

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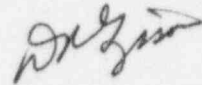
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chemistries are established, Detroit Edison expects all RPV integrity requirements for the Fermi 2 reactor vessel to remain valid.

One new commitment is being made in this letter. Detroit Edison will supplement this letter when the best estimate chemistry data is available.

If you have any questions, please contact Mr. Howard Kantrowitz at (313) 586-1121.

Sincerely,



cc: T. G. Colburn  
M. J. Jordan  
H. J. Miller  
A. Vogel

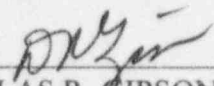
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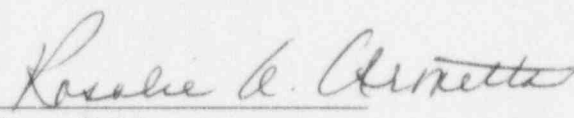
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I, DOUGLAS R. GIPSON, do hereby affirm that the foregoing statements are based on facts and circumstances which are true and accurate to the best of my knowledge and belief.

  
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DOUGLAS R. GIPSON  
Senior Vice President

On this 17<sup>th</sup> day of November 1995 before me personally appeared Douglas R. Gipson, being first duly sworn and says that he executed the foregoing as his free act and deed.

  
\_\_\_\_\_  
Notary Public

ROSALIE A. ARMETTA  
NOTARY PUBLIC - MONROE COUNTY, MI  
MY COMMISSION EXPIRES 10/11/99